CROOKED RIVER BRIDGE
Spanning Crooked River south of Route FF
Rayville Vicinity
Ray County
Missouri

HAER No. MO-66

HAER
MO
89- RAV.V,
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
Rocky Mountain Regional Office
National Park Service
U.S. Department of the Interior
P.O. Box 25287
Denver , Colorado 80225

HISTORIC AMERICAN ENGINEERING RECORD

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Crooked River Bridge

HAER No. MO-66

Location: Spanning Crooked River on Cart Road 168, south of Route FF, Section 28, Township 53 North, Range 28 West, 1-1/2 miles north and 1 mile east of Rayville, Ray County, Missouri

UTM: A 15/4358093/410235
B 25/4358107/410275
Quad: Rayville

Date of Construction: July 1893

Present Owner: Ray County
Ray County Courthouse
Richmond, Missouri 64085

Present Use: Vehicular bridge, to be replaced by a new vehicular bridge. Projected date of removal: January-February 1992.

Significance: The Crooked River Bridge is a single span through Pratt truss with two steel beam approach spans. The bridge was built in 1893 by the John Dildine Company of Cameron, Missouri. Another 100-foot, five-panel Pratt truss built by John Dildine Co. is still in use 1/4 mile north of the proposed replacement site. The Pratt-type truss was commonly built to service rural roads throughout the United States from the late 1890s through the early 1900s. Because of increased traffic and larger vehicles, this type of bridge is becoming inadequate and increasingly rare.

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Cook, Flatt & Strobel, Engineers, P.A.

March 1991

I. HISTORY

A. Securing a Contractor

Before the first bridges were built in Ray County, Missouri, hauling freight or traveling of any kind across streams and rivers was difficult and often dangerous. Streams and rivers had to be crossed by fording. The most desirable crossings were at shallow spots with gravel or rock bottoms. During spring thaws or following heavy storms, however, crossing the water was arduous and sometimes even impossible.

A traveler could only wait for the flood waters to subside or would select an alternate route often involving many extra miles of travel. The number of available crossings of Crooked River was extremely limited, consequently the building of bridges became a priority.

Bridges were so important to the county that they often took precedence over improvement of roads. In a pattern similar to that of other counties in Missouri, Ray County had a number of metal through truss and pony truss bridges built during the period of 1890 to 1920.

Records available at the office of the county clerk in the Ray County Courthouse indicate action on a new bridge over Crooked River began in July 1891. Estimates were developed for a suspension bridge with a 140-foot main span and for an "iron" bridge with an 80-foot main span.[1]

The contract to build Ray County Bridge 168000.2 was awarded on December 1892 to John Dildine and Company of Cameron, Missouri. Other companies who bid on the project were: J. W. Mitchell (location unknown) and the St. Joseph Bridge & Iron Company, St. Joseph, Missouri. Each bidder submitted a variety of plans, with costs ranging from $1,550.00 to $1,980.00. The cost of the bridge chosen was $1,600.00.[2] The bridge was completed in July 1983.[3]

B. Construction Chronology

No specific information was located relative to actual construction sequence for the bridge over Crooked River.

C. Location

Crooked River Bridge is located northeast of Rayville, Missouri. It is in the southeast quarter of Section 28, Township 53 North, Range 28 West. It is on County Road No. 168, 1/8 mile south of the west end of State Route FF. This is 1-1/2 miles north and 1 mile east of Rayville, Missouri.

III. THE BRIDGE

A. Description

The Crooked River Bridge is a typical five-panel pin-connected Pratt high through truss. It has two 29-foot steel beam approach spans. The piers are steel pipe caissons and the abutments are concrete. The main span measures 84 feet in length, with a total structure length of 140 feet. Vertical clearance over the deck is 13.0 feet. The clear roadway width is 13.6 feet. The Pratt truss was the most popular and common type of bridge used for stream crossings in Missouri and throughout the midwest in the late 1800s and early 1900s.

Main Span

The main span has diagonal members in tension with the two inside vertical members acting compression. The two vertical members nearest the ends of he main span are hangers and act in tension. The tension members consist of eyebars. Round iron rods were used for diagonal bracing, both top and bottom. Diagonal members are double eyebars tied to pins, top and bottom. The end posts and top chord are comprised of two channels with a solid cover plate and partial underside bracing. The vertical compression members are made up of two channels tied together with lacing riveted in place. The upper sway bracing is fabricated of angles with riveted gusset plate connections. The sway bracing connects to the vertical compression members and the end posts. The lower chords are eyebars pin connected to the vertical members. The floor beams are attached to the vertical members with "U" bolts.

The bridge has no metal ornamentation. A bracket at each portal indicates that plaques existed. Although one plaque was in place when the photographs were taken, the plaques are now gone and their whereabouts are unknown. Specific information from the plaque located at the east portal was recorded during design surveys, as follows:

John Dildine and Co.
Bridge Builders
Cameron, Mo. 1893

The bridge deck is made of rough sawn lumber of various dimensions. The bottom layer of decking lies transverse to the centerline of the bridge. Two sets of three planks each have been laid longitudinally to serve as runners for vehicle wheels. The deck lies on iron stringers comprised of channels and I beams. The stringers are supported by I beams commonly known as transverse floor beams.

Approach spans

The southeast approach spans are comprised of 29-foot steel beam spans. The floor system is the same as for the main span.

Piers

The piers under the main span are 30 inches in diameter and extend 8 feet from the floor of the bridge to the ground. They are made of concrete encased in steel.

Abutments

The abutments are built of concrete.

B. Ownership & Future

The Crooked River Bridge has been owned and maintained by Ray County since its construction. The county bridge inventory number is 168000.2. A structural appraisal of the Crooked River Bridge revealed that the steel superstructure remains in relatively good condition, but has a very limited load capacity. Rating calculations, based on an inspection in 1989, recommended a weight limit of 3 tons. This allows only for passage of automobiles and light pickup trucks.

The original steel cylinder pier foundations show significant deterioration.

The new bridge is to be built immediately downstream.

On June 5, 1991, an advertisement regarding availability of the Crooked River Bridge was forwarded to the Ray County Commission to be placed in The Missouri Transportation Bulletin; Preservation News, a local newspaper;, and Rails to Trails Conservancy. Upon completion of all documentation and approval by the National Park Service, the structure will be removed to make way for the new bridge.

III. BIOGRAPHICAL MATERIAL

A. The John Dildine Company

The John Dildine Bridge & Iron Company was located in Cameron, Missouri. The earliest record of incorporation is September 21, 1908, as Dildine Bridge & Iron Company. Prior to that date, the name was Dildine Bridge and Construction Company.[4]

The Dildine Bridge and Iron Company was incorporated in Missouri for 10 years. The company was formed for the following purposes: "to manufacture and contract for the erection of steel, iron, stone and concrete bridges, roof trusses, structural metal work, water towers and tanks, and for general repair and jobbing machine work for individuals and corporations. To purchase and own such real estate as may be necessary and required for the purposes of the corporation."[5] There is no exact count of the bridges built by John Dildine Co.; however, records indicated the company was quite prolific in the area surrounding Cameron, Missouri.

IV. ENDNOTES

1. Record of the County Clerk, Ray County, MO., July term, 1891.

2. Record of the County Clerk, Ray County, MO., December term, 1892.

3. Record of the County Clerk, Ray County, MO., July term, 1893.

4. Inactive file No. 23087, Office of the Secretary of State, 830 Truman State Office Building, Jefferson City, Mo.

5. Inactive file No. 23087, Office of the Secretary of State, 830 Truman State Office Bldg., Jefferson City, Mo.

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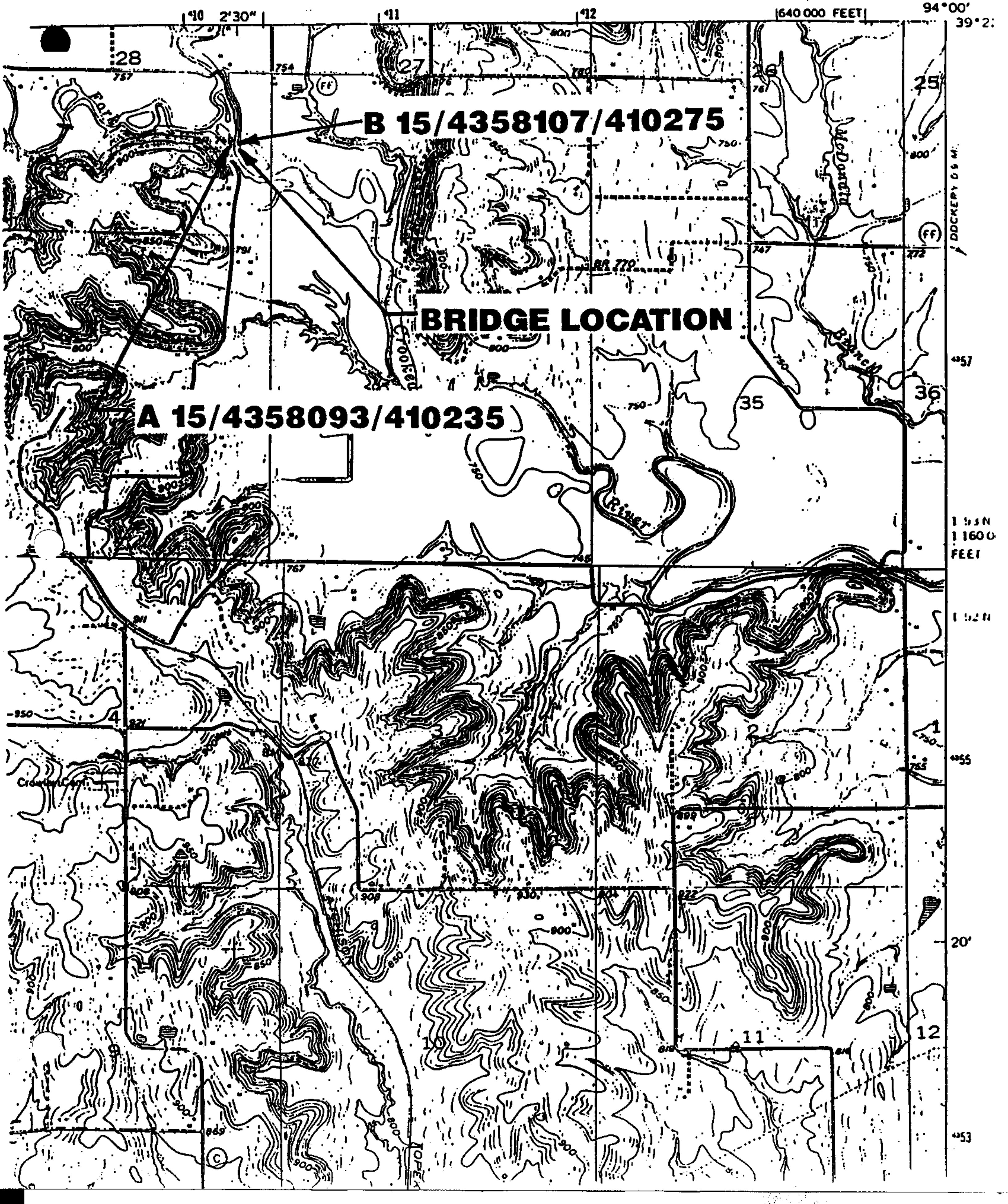
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BRIDGE LOCATION
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